

# Cisco 3600 Series

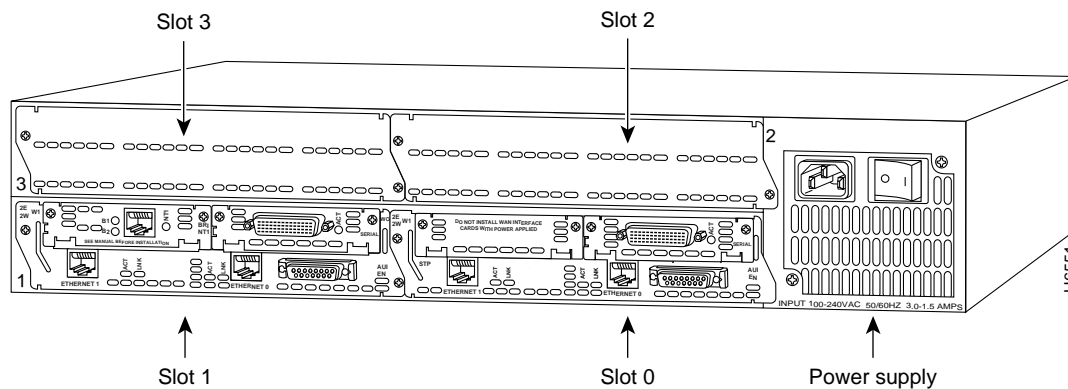
## Product Overview

The Cisco 3600 series is a multifunction platform that combines dial access, routing and LAN-to-LAN services and multiservice integration of voice, video and data in the same device. The Cisco 3600 series includes the Cisco 3640 and Cisco 3620 access servers/routers. As modular solutions, the Cisco 3640 and Cisco 3620 have the flexibility to meet both current and future connectivity requirements. The Cisco 3600 series is fully supported by Cisco IOS software, which includes dial-up connectivity, LAN-to-LAN routing, data and access security, WAN optimization, and multimedia features.

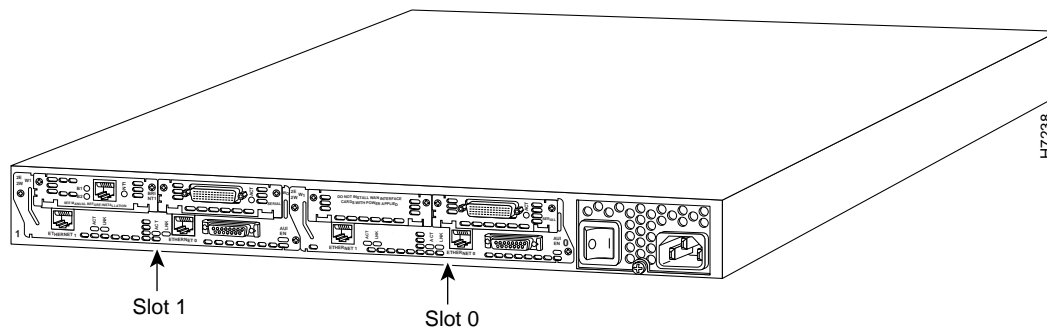
The Cisco 3640 has four network module slots; the Cisco 3620 has two slots. Each network module slot accepts a variety of network module interface cards, including LAN and WAN mixed media cards supporting Ethernet, Fast Ethernet, Token Ring, and a variety of WAN technologies. These cards provide the foundation of LAN and WAN connectivity on a single, modular, network module. Additional applications are supported with a series of network module cards offering digital modems, asynchronous and synchronous serial, ISDN PRI, and ISDN BRI interfaces.

The Cisco 3600 shares network modules, WAN Interface Cards, and Voice Interface Cards with the Cisco 2600 Series. The Cisco 3600 shares WAN Interface Cards with the Cisco 1600 and Cisco 1720 Series.

**Figure 5-9: Cisco 3640 Router Rear View**



**Figure 5-10: Cisco 3620 Router Rear View**



## Key Features and Benefits

The Cisco 3640 and Cisco 3620 routers support the following network applications and services:

- Dial-up services

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The Cisco 3600 is a mid-range dial-up platform that fits between Cisco's AccessPath and AS5300 products at the high end and the Cisco 2500 series access servers at the low end. Mixed-mode and high density ISDN and asynchronous configurations offer substantial flexibility in dial-up applications. New integrated digital modems (with support for PRI, BRI, CT1 and R2) and new integrated analog modems further enhance the dial access flexibility and scalability of the Cisco 3600.

- ISDN PRI networks

The Cisco 3600 series offers new levels of cost effective ISDN PRI concentration. A Cisco 3640 configured with a Mixed Media LAN/ISDN PRI network module and three 2-port ISDN PRI network modules supports up to 186 (T1) or 240 (E1) B channels. This is a powerful and cost effective way to aggregate many branch offices and telecommuters onto one corporate network.

- ISDN BRI networks

For areas of the world where ISDN BRI services are more widely available or cost effective, the Cisco 3600 series supports many BRI interfaces. Configured with a LAN network module and three 8-port network modules, a Cisco 3640 connects up to 48 B channels. In this way, one system provides high-density BRI interface dial-up support and local LAN and WAN routing connectivity.

- Serial networks

With support for up to 24 synchronous serial interfaces and a mixed media network module, the Cisco 3600 series and its RISC processor are the perfect complement to the Cisco 2500 and 1600 series. The Cisco 3600's higher performance and modular design are appropriate for locations needing support for multiple 56-kbps links or the ability to change configurations in the future.

- Mixed WAN services

Many corporate environments require support for a mixture of ISDN PRI, ISDN BRI, asynchronous serial, and synchronous serial connections. The Cisco 3640 is ideal for this scenario. It allows migration between interfaces or simultaneous support of several technologies.

- Power branch applications

The Cisco 3620 allows new levels of connectivity and performance for branch offices with its smaller size, lower slot density, and lower cost. A combination of one mixed media network module plus another network module provides new opportunities for branch offices needing more than a fixed-configuration model. The Cisco 3620, for example, provides multiple LAN access server support for asynchronous and ISDN environments, which complements the Cisco 2500 series access servers. Alternatively, a Cisco 3620 adds multiple LAN capabilities to branch bank environments needing to assimilate legacy serial devices, connecting them all to a high-speed Frame Relay network.

- LAN-to-LAN services

Consistent with its other capabilities, the Cisco 3600 series offers midrange LAN-to-LAN connectivity for branch offices needing a flexible modular platform. This is different from other low- to mid-range Cisco routers. The Cisco 4500 and Cisco 4700 are the highest-performance access routers and support a wide array of high-speed LAN and WAN interfaces, including FDDI and ATM. The Cisco 2500 series, with a multitude of fixed configurations, offers cost effective branch office solutions including integrated routers and hubs, single and dual LAN routers, and multiple serial routers.

## Network Module Options for the Cisco 3600 Series

The Cisco 3640 and Cisco 3620 routers are 4- and 2-slot modular access routers, respectively, whose LAN and WAN connections are configured by means of interchangeable network modules and WAN interface cards.

The following network modules are available for the Cisco 3640 and Cisco 3620 routers:

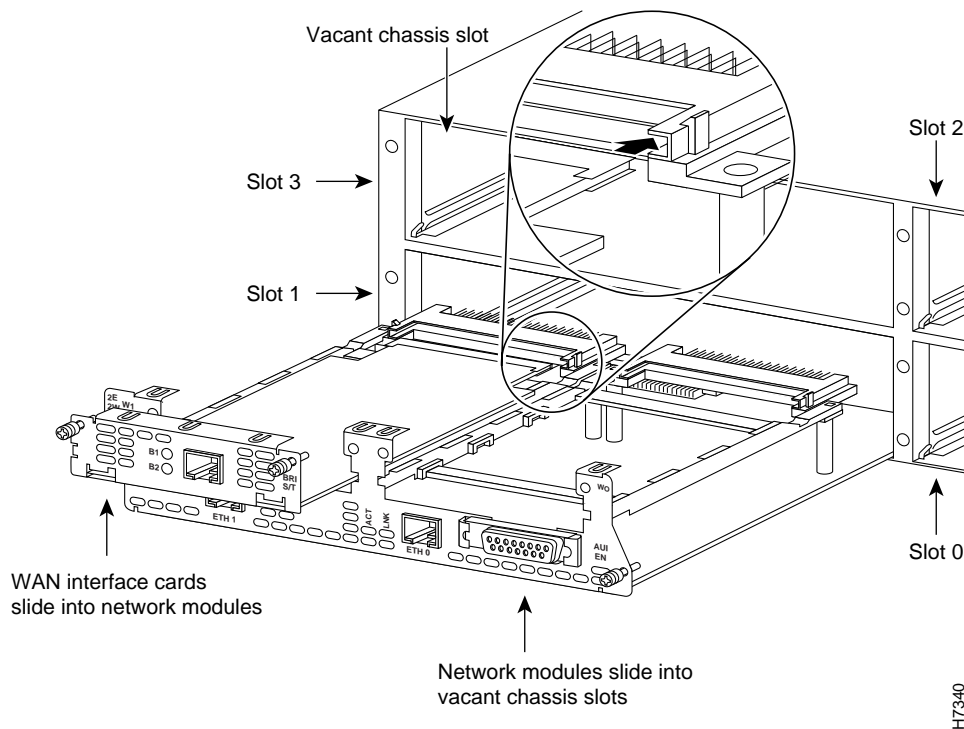
- Single-Port High-Speed Serial Interface (HSSI)
- ATM 25 Mbps Network Module
- ATM OC3 155Mbps Network Module
- 6-, 12-, 18-, 24- and 30-digital modem network modules
  - LAN with modular WAN (WAN Interface Cards)

—LAN with channelized/ISDN PRI

- 8 and 16 analog modem network modules
- Mixed-media network modules
- Channelized T1, ISDN PRI and E1 ISDN PRI network modules
- Combined FastEthernet and PRI network modules
- 4- and 8-port ISDN BRI network modules
- 16-, and 32-port asynchronous network modules
- 4- and 8-port synchronous/asynchronous network modules
- 1- and 4-port Ethernet network modules
- 1-port Fast Ethernet network modules (100BaseT-“TV” and Fiber - “FX”)
- 8 and 16 port analog modem modules
- 4-port serial network module
- Compression network module

The figure below shows how a vacant chassis slot on the Cisco 3640 accepts a mixed media network module, which in turn accepts a WAN interface card.

**Figure 5-11: Relationship Between Cisco 3600 Series Hardware Devices**



**Note** For detailed information about network modules (NMs), WAN interface cards (WICs), and Voice interface cards, (VICs), see the “NMs, WICs, and VICs for the Cisco 3600 Series, 2600 Series, and 1600 Series” section in this chapter.

# Specifications

## Hardware

**Table 5-46: Cisco 3600 Series Hardware Specifications**

Characteristic	Description
Network interfaces supported on the Cisco 3640 and Cisco 3620	Ethernet Fast Ethernet Token Ring Asynchronous Synchronous serial High Speed Serial Interface ISDN BRI (ST and U interfaces) Channelized T1/ISDN PRI (with and without CSU) Channelized E1/ISDN PRI (balanced and unbalanced) Digital Modems (3640 only) Analog Modems Voice ATM 25 Mbps ATM OC3
Supported Cisco IOS software	Release 11.1 AA , Release 11.2 P, 11.3, and 11.3T, 12.0, 12.0T
Flash memory	8 MB of Flash memory (SIMM), expandable to 32 MB. PCMCIA Flash memory cards are also supported by each model, available in 4 to 16 MB sizes.
DRAM memory (system and packet)	32 MB of DRAM memory. The Cisco 3640 is expandable to 128 MB. The Cisco 3620 is expandable to 64 MB.
Standard components	2 PCMCIA slots High-speed console and auxiliary ports Rack- and wall-mount kit Power supply and cord Console Cable
Network module slots	4 slots on the Cisco 3640 2 slots on the Cisco 3620
Processor type	Cisco 3640: 100-MHz IDT R4700 RISC Cisco 3620: 80-MHz IDT R4700 RISC
Dimensions (H x W x D)	Cisco 3640: 3.44 x 17.5 x 15.7 in. (8.7 x 44.5 x 40.01 cm) Cisco 3620: 1.75 x 17.5 x 13.5 in. (4.4 x 44.5 x 34.2 cm)
Weight (average shipping)	25 lb (13.6 kg), includes chassis and 4 network modules

**Table 5-47: Cisco 3600 Series Environmental Specifications**

Description	Specification
Input voltage, AC power supply	100 to 240 VAC, autoranging
Current	Cisco 3640: 2.0A; Cisco 3620: 1.0A
Frequency	50 to 60 Hz
Power dissipation	Cisco 3640: 140W (maximum); Cisco 3620: 60W
Input voltage, DC power supply	38 to 72 VDC
Current	Cisco 3640: 5.0A; Cisco 3620: 2.5A
Power dissipation	Cisco 3640: 140W (maximum); Cisco 3620: 60W
Operating humidity	5 to 95%, noncondensing

Description	Specification
Operating temperature range	32 to 104°F (0 to 40°C)
Nonoperating temperature range	–40 to 185°F (–40 to 85°C)
Regulatory compliance	FCC Part 15 Class B. For additional compliance information, refer to the 3600 Series Public Network Certification document.

**Note** For detailed information about network modules (NMs), WAN interface cards (WICs), and Voice interface cards, (VICs), see the “NMs, WICs, and VICs for the Cisco 3600 Series, 2600 Series, and 1600 Series” section in this chapter.

## Memory, Power Supply, and Cable Options

The Cisco 3600 series uses two types of replaceable or upgradeable memory: DRAM memory and Flash memory. Both types of memory are implemented with SIMMs. Each router has two Flash SIMM sockets and four DRAM SIMM sockets. In the standard Flash memory configuration, the first socket contains a 4-MB Flash SIMM, and the second socket is empty. You can upgrade the Flash memory to 16 MB on both routers. Each Cisco 3600 router ships standard with 32 MB of DRAM. The Cisco 3640 is expandable to 128 MB of DRAM. The Cisco 3620 is expandable to 64 MB of DRAM.

The Cisco 3600 series routers use a DRAM memory configuration that is different from other Cisco routers. Unlike the Cisco 4000 series routers, for example, which have separate physical locations for processor memory and packet memory, the Cisco 3600 series routers use one pool of DRAM memory. The DRAM is partitioned into processor memory and packet memory areas. For example, the memory of a 16-MB DRAM configuration is split into 12 MB for processor memory and 4 MB for the packet memory.

The Cisco 3600 allows you to load new system images using a PCMCIA Flash memory card. You can also load images from a local or remote PC through the console or auxiliary ports using the Xmodem or Ymodem protocols.

**Note** For guidelines on how to order the proper amount of memory to support different network module configurations, refer to product bulletin 544, 3600 Series Memory Options and Configuration Guide. This document is accessible from Cisco Connection On-line (CCO). The URL is <http://www.cisco.com/warp/public/728/3600/index.html>.

## Software

**Table 5-48: Cisco 3600 Series Software Specifications**

Characteristic	Description
Supported Cisco IOS software	Release 11.1 AA , Release 11.2 P, 11.3, and 11.3T, 12.0, 12.0T

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# Ordering Information

## Product and Part Numbers

### Part Numbers for the Cisco 3600 Series Routers

Part Description	Part Number
Cisco 3640 4-slot modular router with an AC power supply	CISCO3640
Cisco 3640 4-slot modular router with a DC power supply	CISCO3640-DC
Cisco 3640 4-slot modular router for use with an AC redundant power system	CISCO3640-RPS
Cisco 3620 2-slot modular router with an AC power supply	CISCO3620
Cisco 3620 2-slot modular router with a DC power supply	CISCO3620-DC
Cisco 3620 2-slot modular router for use with an AC redundant power system	CISCO3620-RPS

### Digital Modem Network Modules

6 digital modem network module	NM-6DM
12 digital modem network module	NM-12DM
18 digital modem network module	NM-18DM
24 digital modem network module	NM-24DM
30 digital modem network module	NM-30DM
6 digital modem upgrade card	MICA-6MOD
Modem management technology license	MMTL-3600-xx

### Mixed Media Network Modules

1 Ethernet and 2 WAN interface card slots	NM-1E2W
2 Ethernet and 2 WAN interface card slots	NM-2E2W
1 Ethernet, 1 Token Ring, and 2 WAN interface card slots	NM-1E1R2W

### Channelized T1 and E1 ISDN PRI Network Modules

1-port channelized T1/ISDN PRI network module	NM-1CT1
1-port channelized T1/ISDN PRI with CSU network module	NM-1CT1-CSU
2-port channelized T1/ISDN PRI network module	NM-2CT1
2-port channelized T1/ISDN PRI with CSU network module	NM-2CT1-CSU
1-port channelized E1/ISDN PRI balanced network module	NM-1CE1B
1-port channelized E1/ISDN PRI unbalanced network module	NM-1CE1U
2-port channelized E1/ISDN PRI balanced network module	NM-2CE1B
2-port channelized E1/ISDN PRI unbalanced network module	NM-2CE1U
Blank network module panel	NM-BLANK-PANEL=

Part Description	Part Number
<b>ISDN BRI Network Modules</b>	
4-port ISDN BRI network module with an S/T interface	NM-4B-S/T
4-port ISDN BRI with NT1 network module	NM-4B-U
8-port ISDN BRI network module with an S/T interface	NM-8B-S/T
8-port ISDN BRI with NT1 network module	NM-8B-U
<b>Asynchronous/Synchronous Network Modules</b>	
4-port asynchronous/synchronous serial network module	NM-4A/S
8-port asynchronous/synchronous serial network module	NM-8A/S
16-port asynchronous serial network module	NM-16A
32-port asynchronous serial network module	NM-32A
<b>Ethernet Network Modules</b>	
1-port Ethernet network module	NM-1E
4-port Ethernet network module	NM-4E
<b>Fast Ethernet Network Module</b>	
1-port Fast Ethernet network module 100-Base-TX (RJ-45)	NM-1FE-TX
1-port Fast Ethernet network module 100-Base-FX (Fiber optic)	NM-1FE-FX
<b>Serial Network Module</b>	
4-port serial network module	NM-4T
<b>WAN Interface Cards</b>	
1-port serial WAN interface card	WIC-1T
1-port ISDN BRI WAN interface card <sup>3</sup>	WIC-1B-S/T
1-port ISDN BRI with NT1 WAN interface card <sup>3</sup>	WIC-1B-U
1-port, 4-wire, 56-kbps DSU/CSU WAN interface card	WIC-1DSU-56K4
Blank WAN interface card panel	WIC-BLANK-PANEL=
<b>Cisco 3640 DRAM Memory</b>	
4-MB DRAM SIMM	MEM3640-4D=
8-MB DRAM SIMM	MEM3640-8D=
16-MB DRAM SIMM	MEM3640-16D=
32-MB DRAM SIMM	MEM3640-32D=
16- to 24-MB DRAM upgrade	MEM3640-16U24D
16- to 32-MB DRAM upgrade	MEM3640-16U32D
16- to 48-MB DRAM upgrade	MEM3640-16U48D
16- to 64-MB DRAM upgrade	MEM3640-16U64D
16- to 128-MB DRAM upgrade	MEM3640-16U128D

Part Description	Part Number
<b>Cisco 3620 DRAM Memory</b>	
8 MB DRAM for the Cisco 3640 (2x4 MB DRAM SIMMs)	MEM3640-2X4D=
16MB DRAM for the Cisco 3640 (2x8 MB DRAM SIMMs)	MEM3640-2X8D=
32MB DRAM for the Cisco 3640 (2x16 MB DRAM SIMMs)	MEM3640-2X16D=
64MB DRAM for the Cisco 3640 (2x32MB DRAM SIMMs)	MEM3640-2X32D=
16- to 32-MB DRAM upgrade	MEM3620-16U32D
16- to 48-MB DRAM upgrade	MEM3620-16U48D
16- to 64-MB DRAM upgrade	MEM3620-16U64D
<b>Cisco 3600 Series Flash Memory</b>	
4-MB Flash memory SIMM	MEM3600-4FS=
8-MB Flash memory SIMM	MEM3600-8FS=
4- to 8-MB Flash upgrade	MEM3600-4U8FS
4- to 16-MB Flash upgrade	MEM3600-4U16FS
4-MB blank Flash memory PCMCIA card	MEM3600-4FC
8-MB blank Flash memory PCMCIA card	MEM3600-8FC
2 MB PCMCIA Flash Memory Card plus Digital Modem Firmware for the Cisco 3500 Series	MEM56K-3600(=)
16 MB Flash for the Ciso 3600 Series	MEM56K-3600-16FS
<b>Cisco 3600 Power Supply Options</b>	
Cisco 3640 AC power supply	PWR-3640-AC=
Cisco 3640 DC power supply	PWR-3640-DC=
Cisco 3620 AC power supply	PWR-3620-AC=
Cisco 3620 DC power supply	PWR-3620-DC=
600W redundant AC-input power system 1	PWR-600-AC-RPS-NCAB
RPS 22/18 two-to-one DC power cable	CAB-RPSY-2218(=)
RPS 22/18 one-to-one DC power cable	CAB-RPS-2218(=)
Cisco 3640 redundant power system field upgrade	ACS-3640RPS=
Cisco 3620 redundant power system field upgrade	ACS-3620RPS=
<b>Cisco 3600 Series Supported WAN Interface Cards These WICs are shared with Cisco 1600 and Cisco 2600 Series</b>	
One-port serial WAN Interface Card	WIC-1T
One-port 4-wire 56 Kbps DSU/CSU	WIC-1DSU-56K4
One-port ISDN BRI	WIC-1B-S/T
One-port ISDN BRI with NT1	WIC-1B-U
WIC-BLANK-PANEL=	Blank WAN interface card panel
<b>Cisco 3600 Cable and Rack-Mount Kit Options</b>	
Male DTE V.35 cable, 10 ft	CAB-V35MT



<b>Part Description</b>	<b>Part Number</b>
Female DCE V.35 cable, 10 ft	CAB-V35FC
Male DTE EIA/TIA-232 cable, 10 ft	CAB-232MT
Female DCE EIA/TIA-232 cable, 10 ft	CAB-232FC
Male DTE EIA/TIA-449 cable, 10 ft	CAB-449MT
Female DCE EIA/TIA-449 cable, 10 ft	CAB-449FC
Male DTE X.21 cable, 10 ft	CAB-X21MT
Female DCE X.21 cable, 10 ft	CAB-X21FC
Male DTE EIA/TIA-530 cable, 10 ft	CAB-530MT
MIP-CT1: DSX1 to CSU DB-15 thru cable	CAB-7KCT1DB15
MIP-CT1: DSX1 to CSU DB-15 null cable	CAB-7KCT1NULL
E1 cable ISDN PRI, 10 ft	CAB-E1-PRI
E1 cable Twinax 120 ohm, balanced, 9.8 ft	CAB-E1-TWINAX
E1 cable DB-15 120 ohm, balanced, 16 ft	CAB-E1-DB15
E1 cable BNC 75 ohm, unbalanced, 16 ft	CAB-E1-BNC
Auxiliary and console port cable kit	ACS-3600ASYN
19-inch rack-mount kit for the Cisco 3640	ACS-3640RM-19=
19-inch rack-mount kit for the Cisco 3620	ACS-3620RM-19=
24-inch rack-mount kit for the Cisco 3640	ACS-3640RM-24=
24-inch rack-mount kit for the Cisco 3620	ACS-3620RM-24=
Cisco 3600, 3620 and 3640 SMARTnet maintenance	See the chapter “Service and Support,” later in the catalog.

## Options for the Cisco 3600 Series

For configuration and ordering information for network modules, WAN interface cards, and voice/fax interface cards for the Cisco 3600 series routers, see the “NMs, WICs, and VICs for the Cisco 3600 Series, 2600 Series, and 1600 Series” section.

